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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Application No. Applicant(s) 10/635.862 DELUCA ET AL. Office Action Summary Examiner Art Unit NICHOLAS G. GILES -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --Period for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS. WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b). Status 1) Responsive to communication(s) filed on 31 January 2008. 2a) ☐ This action is FINAL. 2b) This action is non-final. 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) Claim(s) 1-41 and 74-83 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5) Claim(s) _____ is/are allowed. 6) Claim(s) 1-41 and 74-83 is/are rejected. 7) Claim(s) _____ is/are objected to. 8) Claim(s) _____ are subject to restriction and/or election requirement. Application Papers 9) The specification is objected to by the Examiner. 10) ☐ The drawing(s) filed on <u>02 October 2007</u> is/are: a) ☐ accepted or b) ☐ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of: Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s)

1) Notice of References Cited (PTO-892)

Notice of Draftsperson's Patent Drawing Review (PTO-948)

Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date ______.

Interview Summary (PTO-413)
 Paper No(s)/Mail Date.

6) Other:

5) Notice of Informal Patent Application

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/31/2008 has been entered.

Terminal Disclaimer

 The terminal disclaimer filed on 01/31/2008 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of application no. 10/635918 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Response to Arguments

Applicant's arguments filed 01/31/2008 have been fully considered but they are not persuasive.

Applicant argues that in claims **31-34 and 36-41** that the "spectral nature of the flashlight" in not considered image acquisition device-specific information because it isn't the spectral response curve of the image sensor. The examiner points out that the

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spectral nature of the flashlight is taken into consideration so that the spectral response of the sensor (i.e. original colors) is remapped to take the flashlight into account.

Regarding claim 23, applicant argues that aperture meta-data is included, but calculated. The examiner points out that even though it is calculated that the metadata information that is needed to calculate aperture is still included as metadata and therefore the aperture information only needs to be extracted from the metadata.

Regarding claim 28, application argues that the sensor resolution is not sensor size. The examiner points out that the sensor resolution is a measurement of the sensor size when it comes to how many pixels per inch are on the sensor.

 Applicant's arguments with respect to claims 1-30 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

- The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
- Claims 31-34 and 36-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Silverbrook (U.S. Pub. No. 2004/0032526).

Regarding claim 31, Silverbrook discloses:

A method of filtering a red-eye phenomenon from an acquired digital image comprising a multiplicity of pixels indicative of color, the pixels forming various shapes within the image (eyes, face), the method comprising: (a) analyzing meta-data information including image

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acquisition device-specific information including a spectral response curve of a sensor of an acquisition device with which the image was acquired (¶0026, spectral nature which has a response curve, spectral nature of the flashlight is taken into consideration so that the spectral response of the sensor (i.e. original colors) is remapped to take the flashlight into account); and (b) determining, based at least in part on said meta-data analysis, whether one or more regions within said digital image are suspected as including red eye artifact (¶0023-0026).

Regarding claim 32, see the rejection of claim 31 and note that Silverbrook further discloses:

Meta-data information comprising a color transformation from raw sensor pixel values to saved image pixel values (¶0025-0026).

Regarding claim **33**, see the rejection of claim **31** and note that Silverbrook further discloses:

Determining operation including a probability determination process based upon a plurality of criteria (¶0023-0026, flash, determination of eye, faces).

Regarding claim 34, see the rejection of claim 31 and note that Silverbrook further discloses:

Meta-data information comprising acquisition device-specific information (¶0023-0026, flash used, spectral nature of flash).

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Regarding claim **36**, see the rejection of claim **35** and note that Silverbrook further discloses:

Meta-data comprising a color transformation from raw sensor pixel values to saved image pixel values (¶0025-0026).

Regarding claim 37, see the rejection of claim 31 and note that Silverbrook further discloses:

Color values of said pixels indicative of red eye color being calculated based on a spectral response of said red eye phenomenon (¶0025-0026).

Regarding claim 38, see the rejection of claim 31 and note that Silverbrook further discloses:

Spectral response of said red eye phenomenon being according to illumination by a spectral distribution of a camera flash unit ($\P0025-0026$).

Regarding claim 39, see the rejection of claim 31 and note that Silverbrook further discloses:

Spectral distribution of said camera flash unit being as recorded by said sensor of said acquisition device with which said image was acquired (¶0023-0026).

Regarding claim **40**, see the rejection of claim **31** and note that Silverbrook further discloses:

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Determining operation including comparing pixels indicative of red eye color and a multiplicity of pixels forming various shapes (¶0023-0026, eye, faces).

Regarding claim 41, see the rejection of claim 31 and note that Silverbrook further discloses:

Pixels indicative of red eye color being calculated based on an inverse transformation of said color transformation from raw sensor pixel values to saved image pixel values (¶0024-0026).

 Claims 74-80 are rejected under 35 U.S.C. 102(e) as being anticipated by Sakamoto (U.S. Patent No. 5.990.973).

Regarding claim 74, Sakamoto discloses:

A method of filtering a red-eye phenomenon from an acquired digital image comprising a multiplicity of pixels indicative of color, the pixels forming various shapes within the image (eyes etc.), the method comprising: (a) analyzing information describing conditions under which the image was acquired (input of signal S); and (b) determining, based at least in part on said analyzing, whether one or more regions within said digital image are suspected as including red eye artifact (signal S represents small area including redeye 4:6-20).

Regarding claim **75**, see the rejection of claim **74** and note that Sakamoto further discloses:

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Analyzing pixel information within one or more regions suspected as including red eye artifact based on said analyzing of information describing conditions under which the image was acquired, and determining whether any of said one or more suspected regions continue to be suspected as including red eye artifact based on said pixel analysis, said pixel analysis being performed after said analyzing of information describing conditions under which the image was acquired (4:21-25).

Regarding claim **76**, see the rejection of claim **74** and note that Sakamoto further discloses:

Analyzing pixel information within said digital image, and determining whether said one or more regions are suspected as including red eye artifact based on said pixel analysis, and wherein said pixel analysis is performed after said analyzing of information describing conditions under which the image was acquired (4:6-25).

Regarding claim 77, see the rejection of claim 74 and note that Sakamoto further discloses:

Obtaining anthropometrical information of human faces and said determining, based at least in part on said analyzing of information describing conditions under which the image was acquired, whether said regions are actual red eye artifact, being based further on said anthropometrical information (coordinate position where eyes are located 4:28-40).

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Regarding claim **78**, see the rejection of claim **74** and note that Sakamoto further discloses:

Filtering method being executed within a portable image acquisition device, having no photographic film (4:6-60, done with pixels).

Regarding claim **79**, see the rejection of claim **74** and note that Sakamoto further discloses:

Filtering method is executed as a post-processing step on an external computation device (4:8-13, input image from image input device to red-eye detection/retouch apparatus).

Regarding claim 80, see the rejection of claim 74 and note that Sakamoto further discloses:

Information describing the conditions under which the image was acquired comprising an indication of whether a flash was used when the image was acquired (1:5-11, knowledge of flash being used to implement red-eye correction).

Claim Rejections - 35 USC § 103

- The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
- Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook in view of Matama et al. (U.S. Patent No. 7,042,501).

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Regarding claim **35**, see the rejection of claim **31** and note that Silverbrook is silent with regard to using a plurality of criteria to determine red eye. Matama discloses this in 13:15-31. Matama et al. discloses in 13:53-65 that an advantage to using a plurality of criteria to determine red eye is that if the criteria suggest that red-eye doesn't exist then red eye correction processing can be bypassed and not performed. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Silverbrook use a plurality of criteria to determine red eye.

Claims 1-4, 6, 11, 12, 18, 19, 21, 22, 24, 26, 27, and 29 are rejected under 35
 U.S.C. 103(a) as being unpatentable over Matama et al. (U.S. Patent No. 7,042,501) in view of Silverbrook (U.S. Pub. No. 2004/0032526).

Regarding claim 1, Matama et al. discloses:

A method of filtering a red-eye phenomenon from an acquired digital image comprising a multiplicity of pixels indicative of color, the pixels forming various shapes within the image (eyes, etc.), the method comprising: (a) analyzing meta-data information including image acquisition device-specific information (7:52-8:38, 13:15-31 and Fig. 3); and (b) determining, based at least in part on said meta-data analysis, whether one or more regions within said digital image are suspected as including red eye artifact (7:52-8:38, 13:15-31 and Fig. 3).

Matama et al. is silent with regards to the acquisition device information including aperture, f-stop, color transformation, or CCD size, or combinations thereof. Silverbrook

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discloses this in ¶0023-0026 where the colors are remapped that are affected by a flashlight. As can be seen in ¶0026 that this is advantageous in that retouching algorithms including remapping colors affected by the spectral nature of a flashlight can be utilized. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Matama et al. include the acquisition device information including color transformation.

Regarding claim 2, see the rejection of claim 1 and note that Matama et al. further discloses:

Analyzing pixel information within one or more regions suspected as including red eye artifact based on said meta-data analysis, and determining whether any of said one or more suspected regions continue to be suspected as including red eye artifact based on said pixel analysis, said pixel analysis being performed after said meta-data analysis (7:52-8:38, 13:15-31 and Fig. 3).

Regarding claim 3, see the rejection of claim 1 and note that Matama et al. further disclose:

Pixel analysis is performed after meta-data analysis (7:52-8:38, 13:15-31 and Fig. 3).

Regarding claim 4, see the rejection of claim 1 and note that Matama et al. further discloses:

Analyzing pixel information within said digital image, and determining whether one or more same or different regions are suspected

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as including red eye artifact based on said pixel analysis, said pixel analysis being performed independent of said meta-data analysis (7:52-8:38, 13:15-31 and Fig. 3).

Regarding claim 6, see the rejection of claim 1 and note that Matama et al. further discloses:

Filtering being executed at least partially within a portable image acquisition device, having no photographic film (4:45-55, CCD).

Regarding claim 11, see the rejection of claim 1 and note that Matama et al. further discloses:

Lens being used to capture the image, said meta-data information comprising focal length of the lens at the time of acquisition (7:52-8:38, 13:15-31 and Fig. 3).

Regarding claim 12, see the rejection of claim 11 and note that Matama et al. further discloses:

Meta-data information further comprising focusing distance of the lens at time of acquisition (7:52-8:38, 13:15-31 and Fig. 3).

Regarding claim 18, see the rejection of claim 11 and note that Matama et al. further discloses:

Determining operation including a probability determination process based upon a plurality of criteria (liable for redeye to exist, 13:15-31).

Regarding claim 19, see the rejection of claim 11 and note that Matama et al. further discloses:

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Adjusting a pixel color within any of said regions wherein red eye artifact is determined (8:4-26); and outputting image data to a printer (8:39-44).

Regarding claim 21, see the rejection of claim 11 and note that Matama et al. further discloses:

Meta-data information comprising information describing conditions under which the image was acquired (13:15-31).

Regarding claim 22, see the rejection of claim 21 and note that Matama et al. further discloses:

Meta-data information comprising an indication of whether a flash was used when the image was acquired (13:15-31).

Regarding claim 24, see the rejection of claim 21 and note that Matama et al. further discloses:

Analyzing pixel information within one or more regions (eyes) suspected as including red eye artifact based on said meta-data analysis, and determining whether any of said one or more suspected regions continue to be suspected as including red eye artifact based on said pixel analysis, said pixel analysis being performed after said meta-data analysis (7:52-8:38, 13:15-31 and Fig. 3).

Regarding claim **26**, see the rejection of claim 21 and note that Matama et al. further discloses:

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A lens being used to capture the image, said meta-data information comprising focal length of the lens at the time of acquisition (13:15-31).

Regarding claim 27, see the rejection of claim 26 and note that Matama et al. further discloses:

Meta-data information further comprising focusing distance of the lens at time of acquisition (13:15-31).

Regarding claim 29, see the rejection of claim 21 and note that Matama et al. further discloses:

Adjusting a pixel color within any of said regions wherein red eye artifact is determined (8:4-26); and outputting image data to a printer (8:39-44).

Claims 5, 7-10, 13-17, 20, 23, 25, 28, and 30 are rejected under 35 U.S.C.
 103(a) as being unpatentable over Matama et al. in view of Silverbrook in further view of Velazquez et al. (U.S. Pub. No. 2003/0161506).

Regarding claim 5, see the rejection of claim 1 and note that Matama et al. is silent with regards to using anthropometrical data. Velazquez et al. discloses this in ¶0013-0041. Velazquez et al. discloses in ¶0041 that an advantage to using anthropometrical data is that when a face candidate region score based on the data is below a threshold the region doesn't have to be evaluated for redeye. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Matama's data include anthropometrical data.

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Regarding claim 7, see the rejection of claim 1 and note that Matama et al. is silent with regards to post-processing on an external device. Velazquez et al. discloses this in ¶0042. An advantage to post-processing on an external device is that an external device with more advanced capabilities can be used to manipulate the image then the camera has available. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Matama include post-processing on an external device.

Regarding claim 8, see the rejection of claim 7 and note that Matama et al. further discloses:

Some or all of said meta-data analysis being performed on said image acquisition device (7:52-8:38, 13:15-31 and Fig. 3).

Regarding claim 9, see the rejection of claim 8 and note that Velazquez et al. further discloses marking the regions suspected as containing red eye artifact based on analysis on the external device in ¶0013-0041. An advantage to marking the regions suspected as containing red eye artifact based on analysis on the external device is that an external device with more advanced capabilities can be used to manipulate the image then the camera has available. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Matama include marking the regions suspected as containing red eye artifact based on analysis on the external device.

Regarding claim 10, see the rejection of claim 7 and note that meta-data analysis on the image acquisition device can be found in the rejection of claim 1. Velazquez et

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al. further discloses in ¶0013-0041 meta-data analysis and suspected regions determining at the post-processing step on the external device. An advantage to meta-data analysis and suspected regions determining at the post-processing step on the external device is that an external device with more advanced capabilities can be used to manipulate the image then the camera has available. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Matama include meta-data analysis and suspected regions determining at the post-processing step on the external device.

Regarding claim 13, see the rejection of claim 11 and note that Matama et al. is silent with regards to meta-data including sensor size. Velazquez et al. discloses this in ¶0013-0041 when talking about sensor resolution of pixels per inch. Velazquez et al. discloses in ¶0026 and 0040-0041 that using this data is advantageous in calculating the expected face size, which is used for determining whether red-eye correction is necessary. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Matama include meta-data including sensor size.

Regarding claim 14, see the rejection of claim 13 and note that Velazquez et al. further discloses calculating the expected size of red eye artifact based on metadata including acquisition device information in ¶0013-0041 where the expected face size is determined which is where red eye is expected to be present. Velazquez et al. discloses in ¶0026 and 0040-0041 that calculating the expected size of red eye artifact based on metadata including acquisition device information is advantageous because it

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can be determined whether or not red eye correction should be performed based on the calculated size. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Matama include calculating the expected size of red eye artifact based on metadata including acquisition device information.

Regarding claim 15, see the rejection of claim 14 and note that Velazquez et al. further discloses:

Calculated expected size of said red eye artifact being defined as a range with a density probability function, the range being calculated based on depth of field (¶0026, ¶0013-0041).

Velazquez et al. discloses in ¶0026 and 0040-0041 that using this data is advantageous in calculating the expected face size, which is used for determining whether red-eye correction is necessary. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Matama include calculating the expected size of the red eye artifact being defined as a range with a density probability function, the range being calculated based on depth of field.

Regarding claim 16, see the rejection of claim 13 and note that Velazquez et al. further discloses:

Calculated expected size of said red eye artifact being defined as a range with a density probability function, the range being estimated (¶0029, ¶0037, ¶0013-0041).

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Velazquez et al. discloses in ¶0026 and 0040-0041 that using this data is advantageous in calculating the expected face size, which is used for determining whether red-eye correction is necessary. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Matama include calculating expected size of said red eye artifact being defined as a range with a density probability function, the range being estimated.

Regarding claim 17, see the rejection of claim 13 and note that Velazquez et al. further discloses:

Calculated expected size of said red eye artifact being defined as a range with a density probability function, said meta-data comprising anthropometrical data, and said range being determined by a statistical distribution of said anthropometrical data (¶0029, ¶0037, ¶0013-0041).

Velazquez et al. discloses in ¶0026 and 0040-0041 that using this data is advantageous in calculating the expected face size, which is used for determining whether red-eye correction is necessary. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Matama include calculating expected size of the red eye artifact being defined as a range with a density probability function, the meta-data comprising anthropometrical data, and the range being determined by a statistical distribution of the anthropometrical data.

Regarding claim 20, see the rejection of claim 19 and note that Matama et al. is silent with regards to adjusting the pixel color in a printer. Velazquez et al. discloses this in ¶0042-0043. Velazquez et al. discloses in ¶0043 that an advantage to adjusting

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color in a printer is that users review results and interact to accept or reject the result. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Matama include adjusting the pixel color in a printer.

Regarding claim 23, see the rejection of claim 21 and note that Matama et al. is silent with regards to using the aperture as meta-data. Velazquez et al. discloses this in ¶0013-0041. Velazquez et al. discloses in 0040-0041 that using the aperture is advantageous because it can be determined whether or not red eye correction should be performed based on the calculated size. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Matama include the aperture as meta-data.

Regarding claim 25, see the rejection of claim 21 and note that Matama is silent with regards to using anthropometrical data. Velazquez et al. discloses this in ¶0013-0041. Velazquez et al. discloses in ¶0041 that an advantage to using anthropometrical data is that when a face candidate region score based on the data is below a threshold the region doesn't have to be evaluated for redeye. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Matama's data include anthropometrical data.

Regarding claim 28, see the rejection of claim 26 and note that Matama is silent with regards to meta-data including sensor size. Velazquez et al. discloses this in ¶0013-0041 when talking about sensor resolution of pixels per inch. Velazquez et al. discloses in ¶0026 and 0040-0041 that using this data is advantageous in calculating the expected face size, which is used for determining whether red-eye correction is

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necessary. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Matama include meta-data including sensor size.

Regarding claim 30, see the rejection of claim 29 and note that Matama is silent with regards to adjusting the pixel color in a printer. Velazquez et al. discloses this in ¶0042-0043. Velazquez et al. discloses in ¶0043 that an advantage to adjusting color in a printer is that users review results and interact to accept or reject the result. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Matama include adjusting the pixel color in a printer.

 Claim 81 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Fellegara et al. (U.S. Patent No. 5,845,166).

Regarding claim 81, see the rejection of claim 74 and note that Sakamoto further discloses:

Determining whether said regions are actual red eye artifact being performed as a probability determination process based upon a plurality of criteria (1:5-11, 4:6-60, coordinates of eyes, flash being used, red eye determination unit).

Sakamoto is silent with regards to performing the process in a digital camera.

Fellegara et al. discloses performing computer processes in a camera in 19:40-20:9. As can be seen in Fellegara in 20:3-6 this is advantageous in that the camera operator can use the camera interface to execute editing functions on the camera. For this reason it

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would have been obvious to one of ordinary skill in the art at the time the invention was made to have Sakamoto include performing the process in a digital camera.

 Claim 82 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto.

Regarding claim 82, see the rejection of claim 74 and note that Sakamoto further discloses:

Adjusting a pixel color within any of said regions wherein red eye artifact is determined (4:51-60).

Sakamoto is silent with regards to outputting the image to a printer. Official Notice is taken that it was well known at the time the invention was made to output images to a printer. An advantage to doing so is that a person can print the image for a photo album. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Sakamoto include outputting the image to a printer.

 Claim 83 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Matama (U.S. Patent No. 7,042,501).

Regarding claim 83, see the rejection of claim 82 and note that Sakamoto further discloses:

Determining whether said regions are actual red eye artifact being performed as a probability determination process based upon a plurality of

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criteria (1:5-11, 4:6-60, coordinates of eyes, flash being used, red eye determination unit).

Sakamoto is silent with regards to adjusting the pixel color within the printer.

Matama discloses this in 8:39-44 and 15:13-18. As can be seen in 15:13-18 of Matama this is advantageous in that the printer can effectively perform the red eye correction processing by simple manipulation and output an image of high quality without a red eye effect in high productivity. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Sakamoto adjusting the pixel color within the printer.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICHOLAS G. GILES whose telephone number is (571)272-2824. The examiner can normally be reached on Monday through Friday from 7:30am to 4:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lin Ye/ Supervisory Patent Examiner, Art Unit 2622